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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,314

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EXAMINER

HAN, KWANG S

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

08/20/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,314	<b>Applicant(s)</b> USUI ET AL.	
	<b>Examiner</b> Kwang Han	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 11-32 and 34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 33, and 35-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/1/09, 6/17/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

**ELECTROLYTE COMPOSITON, PHOTOELECTRIC CONVERTER AND DYE-  
SENSITIZED SOLAR CELL USING SAME**

Examiner: K. Han    SN: 10/564,314    Art Unit: 1795    August 20, 2009

***Election/Restrictions***

1.     Applicant's election without traverse of Group I, Claims 1-10, 33, and 35-39 in the reply filed on June 5, 2009 is acknowledged.
  
2.     Claims 11-32 and 34 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse.

***Claim Rejections - 35 USC § 102***

3.     The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.     Claims 1, 2, 5-6, 8-10, 33, and 35-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Ono (JP 2003-157914, machine translation).

Regarding claims 1 and 8, Ono is directed towards an electrolyte composition comprising an ionic liquid (liquefied salt) [0024, 0025] and conductive particles [0045, Abstract].

Regarding claim 2, Ono discloses a gelling agent [0023] for the electrolyte.

Regarding claims 5, 6, and 33, Ono discloses the conductive particle to be comprised of carbon including carbon fiber and carbon black [0050].

Regarding claims 9 and 10, Ono discloses the electrolyte to be used in an photoelectric conversion element with a semiconductor fine particle containing layer (20) which is dye sensitized, a counter electrode, and a transport layer comprised of the electrolyte (electrolyte layer) [Abstract, 0022].

Regarding claim 35, Ono discloses the ionic liquid to be a molten salt being liquid at room temperature [0025].

Regarding claim 36, Ono discloses the fused salt to be a compound expressed by Formulas Y-a through Y-c showing quaternized nitrogen atom and an imidazole ring [0026-0031].

Regarding claim 37, Ono discloses a molten salt comprising anions selected from bis(trifluoromethylsulfonyl)imide and iodide ions [0035].

Regarding claim 38, Ono is silent towards the conductive particles having a specific resistance values but would inherently have these properties. The courts have held that claiming of a property or characteristic which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See MPEP 2112 and 2112.01. When the Examiner has provided a sound bases for believing that the products of the applicant and the prior art are the same, the burden of proof is shifted to the applicant to prove that the product shown in the prior art does not possess the characteristics of the claimed product. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Regarding claim 39, Ono discloses a redox couple [0024].

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono.

Regarding claims 3 and 4, Ono discloses preferred ranges of the conductive particles to be in the range of 80 mass % to 2 mass % depending on the requirements of the counter electrode to supply the electrolyte. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the content of the conductive particles since it has been held that discovering the optimum ranges for a result effective variable such as the conductive particle content involves only routine skill in

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the art in the absence of showing of criticality in the claimed range (MPEP 2144.05) In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ono as applied to claim 6 above, and further in view of Smalley et al. (US 7074310).

The teachings of Ono as discussed above are herein incorporated.

Regarding 7, Ono teaches carbon based conductive material for a photoelectric conversion element [Abstract] but is silent towards the use of carbon nanotubes as a conductive material.

Smalley teaches single-wall carbon nanotubes can serve as elements of electronic devices such as photoelectric cell electrodes and active elements (16:2-14). It would have been obvious to one of ordinary skill in the art at the time of the invention to produce a photoelectric element using single-wall carbon nanotubes as the conductive material because Smalley teaches availability of macroscopic amounts of this material allows for the production of electronic devices such as photoelectric cells (15:46-16:2).

#### ***Contact/Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795